



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/821,320 | 04/09/2004 | Jeffrey P. Rappette | 077077-9130-01 | 9696 |
| 23409 | 7590 | 03/24/2006 | EXAMINER | |
| MICHAEL BEST & FRIEDRICH, LLP 100 E WISCONSIN AVENUE MILWAUKEE, WI 53202 | | | | WYATT, KEVIN S |
| ART UNIT | | PAPER NUMBER | | |
| | | 2878 | | |

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/821,320 | RAPPETTE ET AL. | |
| | Examiner Kevin Wyatt | Art Unit 2878 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on _____.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-33 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 04/09/2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date 0604.
- 4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 04/09/2004 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. It has been placed in the application file, but the information referred to therein has not been considered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 30-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyauchi (U.S. Patent No. 6,456,733 B1).

Regarding claims 30-31, Miyauchi shows in Figs. 1 and 10-11, an illumination arrangement for a monochromatic image recording device (rows of photodiodes (31Y and 31B) in image reading section (2)) on a printing press, said illumination arrangement adapted to illuminate a substrate (W, i.e., paper web) of the printing press and comprising: a plurality of LEDs (21Y and 21B) arranged in a configuration surrounding the monochromatic recording device, the plurality of LEDs including LEDs

that emit light of different colors (yellow and blue) to identify and highlight different ink colored portions of a printed image with respect to a substrate (col. 5, lines 19-23).

Regarding claim 31, Miyauchi shows in Figs. 1 and 10-11, and 16, that the plurality of LEDs includes LEDs that emit light having a blue wavelength to highlight yellow portions of the printed image against the substrate (col. 5, lines 60-65).

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 4-6, 25-26 and 28 are rejected under 35 U.S.C. 102(e) as being anticipated by Gudaitis (Publication No. U.S. 2003/0128362 A1).

Regarding claims 4-6, Gudaitis shows in Figs. 2-4, and 7-8 a method of visually inspecting a substrate of a printing press, the method comprising: providing an image recording device (400, i.e., colorimeter) including a monochromatic sensor (605, i.e., detector) configured to record images printed on a substrate (106, i.e., media); and illuminating the substrate with light of varying colors (blue and white LEDs, paragraph 0035, lines 4-7 and paragraph 0039, lines 5-7) to identify different ink colored portions (paragraph 0022, lines 3-6) of the images printed with respect to the substrate.

Regarding claims 25-26, and 28, Gudaitis shows in Figs. 4, and 7-9, a visual inspection system configured to be in optical communication with a substrate of a

printing press, said visual inspection system comprising: a monochromatic image recording device (first, second, and third detectors, i.e., 408, 410, and 412) configured to record images printed by a printing press onto a substrate (106, i.e., media), the printed images including inks of various colors (cyan, magenta, yellow and black, paragraph 0024, lines 7-8); and illuminators (first source (402), second source (404), and fourth light source (702), provide the white light and blue light, paragraph 0035, lines 5-8, and paragraph 0039, lines 5-7)) of at least two different colors adjacent the recording device and chosen to help highlight the various ink colors with respect to the substrate (106, i.e., media).

Claim Rejections - 35 USC § 103

6. Claims 1, 3, 7-8, 27, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gudaitis (Publication No. U.S. 2003/0128362 A1).

Regarding claims 1 and 3, Gudaitis shows in Figs. 4, and 7-9, a method of visually inspecting a substrate of a printing press, the method comprising: providing an image recording device (first, second, and third detectors, i.e., 408, 410, and 412) including a monochromatic sensor (see Fig. 7) configured to record images printed on a substrate (106, i.e., media), the images including yellow ink (paragraph 0003, lines 8-9); and illuminating the substrate with white light and blue light (first source (402), second source (404), and fourth light source (702), provide the white light and blue light, paragraph 0035, lines 5-8, and paragraph 0039, lines 5-7); wherein illuminating the substrate (106, i.e., media) with blue light highlights the yellow ink against the substrate.

Gudaitis does not explicitly disclose using a white substrate. However, utilizing white substrates as a printing medium is common and well known in the art because it provides a neutral color medium that would not affect the wavelength response of the other colors due to absorption during color measurement and printing.

Regarding claims 7-8, 29, Gudaitis shows in Figs. 4, and 7-9, a visual inspection system configured to be in optical communication with a substrate of a printing press, said visual inspection system comprising: a monochromatic image recording device (first, second, and third detectors, i.e., 408, 410, and 412) configured to record images printed by a printing press onto a substrate (106, i.e., media), the printed images including yellow ink (paragraph 0003, lines 8-9); a plurality of LEDS (first source (402), second source (404), and fourth light source (702), provide the light and blue light, paragraph 0035, lines 5-8, and paragraph 0039, lines 5-7) adjacent the recording device and positioned to illuminate the substrate (106, i.e., media); wherein a portion of the LEDS are white, and a portion of the LEDS are blue, and wherein illuminating the substrate with the blue LEDs highlights the yellow ink against the substrate. In addition the blue LEDs include cyan (wavelengths of blue and cyan are very close to each other on the electromagnetic spectrum, thus blue LEDs normally radiate some small percentage of cyan) in accordance with claims 8 and 29. Gudaitis does not explicitly disclose using a white substrate. However, providing white substrates as a printing medium is common and well known in the art because it provides a neutral color medium that would not affect the wavelength response of the other colors due to absorption during color measurement and printing.

Regarding claim 27, Gudaitis discloses the claimed invention as stated above.

Gudaitis does not explicitly disclose that the LEDs are of high intensity type. However, LEDs that emit light of high intensity are commonly used in the art especially where substrates or webs with large surface areas are used. Therefore, it would have been obvious to one skilled in the art to provide LEDs of high intensity type to insure adequate light coverage of printing surface and detection of spectral radiation of the various colors of ink on the substrate.

7. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gudaitis (Publication No. U.S. 2003/0128362 A1) in view of Riepenhoff (Publication No. U.S. 2003/0041763 A1).

Regarding claim 24, Gudaitis discloses the claimed invention as stated above. Gudaitis does not disclose including a reflector coupled behind the LEDs of the inspection system. Riepenhoff shows in Figs. 3a-b, a reflector (161) mounted behind a light source (160). It would have been obvious to one skilled in the art to provide the reflector of Riepenhoff to the apparatus of Gudaitis for the purpose of redirecting stray light rays onto the substrate.

8. Claims 2, 9-10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gudaitis (Publication No. U.S. 2003/0128362 A1) in view of McCaffrey (Publication No. U.S. 2003/0038887 A1).

Regarding claims 2 and 9, Gudaitis discloses the claimed invention as stated above. Gudaitis does not disclose utilizing a CMOS imager. McCaffrey shows in Fig. 1, a CMOS imager for capturing a video image. It would have been obvious to one skilled

in the art to provide the CMOS imager of McCaffrey to the device of Gudaitis for the purpose of providing an efficient means for storing images into memory.

Regarding claims 10 and 13, Gudaitis shows in Figs. 4, and 8-9 a visual inspection system configured to be in optical communication with a substrate of a printing press, said visual inspection system comprising: a plurality of LEDs (402, 404, and 702, i.e., first, second fifth source) adjacent the recording device (408 and 410, i.e., first and second detector) and positioned to illuminate the substrate (106, i.e., media); wherein a portion of the LEDS are white (paragraph 0035, lines 9-11), and a portion of the LEDs are a color other than white (in accordance with claim 13, a fifth source (702, with blue light) highlights yellow ink printed on media (106), paragraph 0035, lines 5-8, and paragraph 0039, lines 5-7). Gudaitis does not disclose a CMOS image recording device configured to record images printed on a substrate or that the LEDs are explicitly of high intensity type. McCaffrey shows in Fig. 1, a single chip CMOS device for capturing a video image. It would have been obvious to one skilled in the art to provide the single chip CMOS device of McCaffrey to the device of Gudaitis for the purpose of providing high quality image data with low power consumption. In addition, LEDs that emit light of high intensity are commonly used in the art especially where substrates or webs with large surface areas are used. Therefore, it would have also been obvious to one skilled in the art to provide LEDs of high intensity type to insure adequate light coverage of printing surface and detection of spectral radiation of the various colors of ink on the substrate.

9. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gudaitis (Publication No. U.S. 2003/0128362 A1) as applied to claim 10 above, and further in view of Riepenhoff (Publication No. U.S. 2003/0041763 A1).

Regarding claim 12, Gudaitis discloses the claimed invention as stated above. Gudaitis does not disclose including a reflector coupled behind the LEDs of the inspection system. Riepenhoff shows in Figs. 3a-b, a reflector (161) mounted behind a light source (160). It would have been obvious to one skilled in the art to provide the reflector of Riepenhoff to the apparatus of Gudaitis for the purpose of redirecting stray light rays onto the substrate.

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gudaitis (Publication No. U.S. 2003/0128362 A1) in view of Hara (U.S. Patent No. 6,101,945).

Regarding claim 11, Gudaitis discloses the claimed invention as stated above. Gudaitis does not disclose LEDs arranged in a rectangular orientation surrounding a lens. Hara shows in Fig. 3, a recording device that includes a lens (14) and wherein the LEDs (12) are arranged in a rectangular orientation surrounding the lens. It would have been obvious to one skilled in the art to provide the rectangular LED orientation used in Hara to the apparatus of Gudaitis for the purpose of producing high quality image data having illumination with even coverage.

10. Claims 14-17, 18-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wendel (Publication No. U.S. 2003/0147101 A1) in view of Gudaitis (Publication No. U.S. 2003/0128362 A1).

Regarding claims 14-16 and 18-23, Wendel shows in Fig. 1 a visual inspection system (100, i.e., color registration control system) configured to be in optical communication with the substrate of a printing press, said visual inspection system comprising: according to claims 14 and 20, a monochromatic image recording device (102, i.e., camera assembly) configured to record images on a substrate (106, i.e., web); and a control system coupled to the recording device, wherein the control system (110, color registration controller) uses the recorded image to control operation of the printing press; according to claims 18-19 and 21 respectively, a cutoff control system, a color control system and a registration control system (paragraph 0037, lines 7-12); wherein according to claim 22, the recording device (102, i.e., camera assembly) is fixed relative to the printing press (camera (102) is mounted to transport system (104) which is fixed to printing press (paragraph 0036, lines 6-10); and in accordance with claim 16, the blue LEDs include cyan (since the wavelengths of blue and cyan are very close to each other on the electromagnetic spectrum, thus blue LEDs normally radiate some small percentage of cyan); finally, according to claim 23, a CMOS image sensor may be used in camera (102) (paragraph 0047, 4-6). Wendel does not disclose a plurality of LEDS of at least two different colors arranged adjacent the recording device. Gudaitis shows in Fig. 4, a plurality if LEDs (402, 404, and 702, i.e., white and blue, in accordance with claim 15). It would have been obvious to provide the plurality if LEDs of Gudaitis to the apparatus of Wendel for the purpose of highlighting the desired ink colors on the substrate for imaging.

Regarding claim 17, the modified apparatus of Wendel discloses the claimed invention as stated above. Wendel does not explicitly disclose that the LEDs are of high intensity type. However, LEDs that emit light of high intensity are commonly used in the art especially where substrates or webs with large surface areas are used. Therefore, it would have been obvious to one skilled in the art to provide LEDs of high intensity type to insure adequate light coverage of printing surface and detection of spectral radiation of the various colors of ink on the substrate.

11. Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyauchi (U.S. Patent No. 6,456,733 B1).

Regarding claim 32, Miyauchi discloses the claimed invention as stated above. Miyauchi does not explicitly disclose that the LEDs are of high intensity type. However, LEDs that emit light of high intensity are commonly used in the art especially where substrates or webs with large surface areas are used. Therefore, it would have been obvious to one skilled in the art to provide LEDs of high intensity type to insure adequate light coverage of printing surface and detection of spectral radiation of the various colors of ink on the substrate.

12. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miyauchi (U.S. Patent No. 6,456,733 B1) in view of Riepenhoff (Publication No. U.S. 2003/0041763 A1).

Regarding claim 33, Miyauchi discloses the claimed invention as stated above. Miyauchi does not disclose including a reflector coupled behind the LEDs of the inspection system. Riepenhoff shows in Figs. 3a-b, a reflector (161) mounted behind a

light source (160). It would have been obvious to one skilled in the art to provide the reflector of Riepenhoff to the apparatus of Miyauchi for the purpose of redirecting stray light rays onto the web or substrate.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Meyers (U.S. Patent No. 5,557,315) discloses a digital printer using a modulated white light exposure source.

Wendel (Publication No. U.S. 2003/0147101 A1) discloses a camera assembly for a printing press.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Wyatt whose telephone number is (571)-272-5974. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571)-272-2328. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

K.W.

K.W.

Georgia J. Epps
Georgia Epps
Supervisory Patent Examiner
Technology Center 2800